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REFLECTIONS

ON ANTIENT and MODERN

MUSIC, &c.

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Richard Brocklesbury H.D.

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REFLECTIONS

On ANTIENT and MODERN

MUSICK,

WITH THE

Application to the Cure of DISEASES.

To which is subjoined,

An ESSAY to solve the Question, wherein
consisted the Difference of antient MUSICK,
from that of modern Times.

Ut Omnia levi credulitate amplectenda non sunt, ita neque ea protinus repudianda, quæ acriter diuque perpensa fuerint; licet statim cornicum oculos non configant. Harvey de Conceptione.

Such sweet Compulsion doth in Musick lye,
To lull the Daughters of Necessity,
And keep unsteady Nature to her Law,
And the low World in measur'd Motion draw
After the heavenly Tune, which none can hear
Of human Mould with gross unpurged Ear.

MILTON'S *Arcades*.

L O N D O N :

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REFLECTIONS

ON THE

POWER of MUSICK.

CHAP. I.

Shewing the origin of musick, and how it affects the mind.

THE records of early ages so far assert the influence of musick, that admitting those accounts one might reasonably conclude they had the pre-eminence over us in this science.

But though that in fact were true, examples are not wanting in modern history of its surprising effects on the human frame, which receive every day new proofs from repeated experiments.

Whether a further and more frequent application of it to the cure, or mitigation of such distempers, as have hitherto too frequently eluded the ordinary powers of medicine, might
B not

not probably be attended with some desirable effects, I purpose to discuss briefly in the ensuing pages, after first observing it's great credit among the wisest of the antients, and their solemn and frequent exercise of it, in most of their religious and civil concerns.

In the politeſt of all nations this ſcience was not cultivated merely for amuſement, but they attested their veneration, by its indiſpenſable uſe, on the moſt ſublime and ſolemn occaſions.

It accompany'd the praiſes of their gods and heroes.

The founding and fortifying of cities was celebrated with particular airs and ſymphonies, by which they perhaps hop'd to recommend them more effectually to the patronage of their tutelary gods ; or might deſign to ſignify that harmony and œconomy, which was afterwards to take place in the regulation of their publick affairs.

Their forces by ſea and land were diſciplined and regulated by martial muſick, and, indeed, ſo univerſal was their application of this art, that even the adminiſtration of juſtice, againſt publick offenders, was inflicted by ſtripes, that kept time to certain tunes on muſical inſtruments (*a*); from this ſource the philoſophernd a ſtateſman derived part of their improvements and refined pleaſures ; for the ſame thing is related of other great men, as of *Socrates*, who

(*a*) Voſſium de Poematum Cantu & Viribus Rhythmi, p. 47.

apply'd himself, even in the decline of life, to the study of a particular musical instrument (a).

Nor have the most barbarous and uncultivated people of any country entirely neglected this science, there being no nation known so deeply immersed in ignorance, where some rudiments of musick have not been cultivated. The *Jews* themselves, though branded with infamy by the politer heathens for want of taste, and all kind of elegance in the earliest times of their civil constitution, called in this aid to relieve their minds from melancholy and ill humour, and retained it to good purpose, till after the total subjection of that nation.

The universal admiration of an art, which excited such transporting sensations, very naturally disposed the contemplative part of mankind to enquire into the cause, origin and nature of its subject: for whatever appears marvellous in the whole of things, or in any of its parts, necessarily engages the closest attention. Now the knowledge of natural causes, which was undoubtedly very limited in the infancy of things, must of course be chiefly confined to such as presiding in the worship of the gods, would naturally pretend to a more intimate acquaintance with their operations; and being exempt from the common business of life, were at more leisure for such speculations. But the crude and perplexed notions, the priests

(a) Vid. Athenæum de Socrate, L. 14. C. 2.

then had of secondary causes, might probably concur with, and promote their design of preserving their own authority over the people to make them derive such a discovery from a supernatural origin; they argued from its ravishing and extatick effects against the probability of its being of human invention, and ascribed it to the beneficence of some friendly deity of those, which their own artifice had contrived, and which the delusion of their nation admitted (a).

The Mosaic account indeed dates the origin of instrumental musick soon after the creation of the world; for in the most antient history now extant, *Jubal*, the seventh only in his pedigree from *Adam*, is called the father of all that play on the harp and pipes. But the traces of more remote antiquity are at best very obscure and deficient; and the accounts, that remain of the rise and progress of the polite arts and sciences, afford but faint sketches of their origin, and imperfect relations of the inventors themselves.

In the present case, therefore, we must confine our researches to the people of antient Greece, whose manners and customs are of all the antient world most familiar to us; by them it is probable the knowledge of musick was imported, with many *Egyptian* rites, from that wise

(a) Σεινὴ ἔν κατὰ πάντα ἡ μουσικὴ θεῶν εὐεργετα, Plutarch. de musica.

and politick people, who omitted no precaution to establish a general opinion of their own superior wisdom, and to preserve what they had as much as possible within themselves; for the *Egyptians* obliged all foreigners, who came amongst them for improvement in science, to reside a long time, before they were instructed in the profound mysteries of their philosophy, and religious ceremonies.

And we find the same reserve continued in *Greece*, by *Orpheus*, *Musæus*, *Pythagoras*, and other travellers, who had introduced there the laws and customs of the *Egyptians*.

These *Grecian* sages then, who, with the knowledge of the *Egyptians*, had also imported their art of involving it in mystery; and adapting it to excite the veneration of the multitude, consistently with such a design, ascribed the honour of this discovery to *Delius Apollo* (a), the inventor of physick, and common patron of the sister arts.

Now the propagation of many superstitious and fabulous accounts of its effects, was a consequence naturally resulting from the same intention, and it was not less likely to be continued, as it evidently tended to heighten the veneration and authority of those favourite mortals, whom the gods themselves had eminently

(a) Ἡμεῖς δ' οὐκ ἄνθρωπον τίνα παρελάβωμεν εὐρεῖν τῆς μουσικῆς ἀγαθῶν, &c. Nos vero mortalem quenquam negamus fuisse repertorem musicæ bonorum sed Apollini omnibus virtutibus & scientiis ornato deo inventum hoc tribuendum & acceptum ferendum esse putamus. *Plutarch de musica.*

distinguished, as the instruments and vehicles, to convey the benefit and pleasure of these discoveries to mankind. Hence the antient poets, who themselves, in the infancy of the world, were often priests, and whose chief excellencies partly consist in an elegant exaggeration of physical truths, have related many things strange and altogether incredible of the effects of musick on the brute creation ; yet so far were they from attending to what length they might proceed, with any degree of probability on their side, that when the passion of admiration was once raised, and set to work, it was very easy to discern a surprising readiness in mankind, to deceive themselves, and be imposed on; with the grossest improbabilities, and silliest delusions that folly could entertain, or craft could devise. Hence then arose their fictions of the power of musick upon unorganised matter ; for nothing but a violent propensity to enthusiasm, and a wonderful aptitude for deception, could dispose any people to an implicit belief of the poetical fictions, concerning *Apollo*, *Mercury*, or their priests, *Orpheus*, *Amphion* and others ; though the consideration of such irrational, and even stupid assent may somewhat excuse a priest or poet, in affirming, that woods and rocks danced after them, and hills moved from their seats at the sound of their numbers (a).

Thus,

(a) Mercuri nam te docilis magistro
Movit Amphion lapides canendo.

Thus, as every thing above the comprehension of the multitude was, by the crafty address of this politic tribe, rendered still more obscure and unintelligible, the wondrous effects of musick underwent the same fate, and truths concerning them were amplify'd ; which, with the natural bias in the human mind, to reverence and admire whatever carries an air of mystery, together with the pleasing melody of these strains, produced a more profound veneration of the subject in the minds of the people. But, when it once became a public religious tenet, that this proceeded from some supernatural power ; no wonder the populace were prevailed on to believe whatever imposture the sacred order found agreeable with their interest to propagate among them, and nothing surely could answer this end so well, and serve to raise their character so much, as that method of allegory

Tu potes Tigres comitesque filvas
Ducere & rivos celeres morari
Cessit immani tibi blandienti

Janitor Aulæ

Cerberus, quamvis furiale centum
Muniant angues caput ejus, atque
Spiritus ater saniesque manet

Ore trilingui.

Quin & *Ixion*, *Tityus*que vultu
Risit invito, stetit urna paulum
Sicca dum grato *Danai* puellas.

Carmine mulces

Horat. L. 3. Od. XI.

and parable (a); which, with other causes of sad superstition, took its first rise in *Egypt*, the parent country of extravagant belief.

Religion soon gave their philosophy a deep tincture of mysticism, and from this quarter *Pythagoras* seems to have transferred into *Italy*, his highly mystical doctrine concerning the harmony of the spheres; and to have accounted for the effects of gravitation from the analogy, which the heavenly bodies moving in their orbits, have with the laws of musical chords. Thus a musical chord gives the same notes as one double in length, when the tension or force with which the latter is stretched is quadruple: and the gravity of a planet is quadruple of the gravity of a planet at a double distance. In general, that any musical chord may become unison to a lesser chord of the same kind, its tension must be increased in the same proportion as the square of its length is greater; and that the gravity of a planet may become equal to the gravity of another planet nearer to the sun, it must be increased in proportion, as the square of its distance from the sun is greater. If therefore we should suppose musical chords extended from the sun to each planet, that all these chords might become unison; it would

(a) "Ἡ τῆς κρύψις ἡ μουσικὴ τῶν ἱερῶν σεμνοποιεῖ τὸν θεόν, &c. Mystica sacrorum occultatio majestatem numini conciliat, imitans ejus naturam effugientem nostros sensus, tum musica in saltatione rhythmo cantilena versans voluptate artisque varietate nos ea de causa conjungit cum deo.

Strabo, p. 467. Edit. *Casaubon*, Parisiis, 1620.

be

be requisite to increase or diminish their tensions, in the same proportions, as would be sufficient to render the gravities of the planets equal. And from the similitude of those proportions, the celebrated doctrine of the harmony of the spheres is supposed to have been derived.

There are however some things which bear a nearer resemblance to truth, related of the influence of musick, on the lower part of the animated creation ; particularly on those whose mutual desires are uttered in rapturous notes and songs : some instances of which we may hereafter produce.

But as a poet of our own nation hath, with a power of eloquence, peculiar to himself in describing natural objects, delivered us a faithful and accurate copy of nature upon this occasion, I shall insert the following lines (*a*).

For do but note a wild and wanton herd,
Or race of youthful and unhandled colts,
Fetching mad bounds, bellowing and neighing
loud,
(Which is the hot condition of their blood,)
If they perchance hear but a trumpet sound,
Or any air of musick touch their ears,

(*a*) Then I beat my Tabor
At which like unback'd colts they prickt their ears,
Advanc'd their eyelids, lifted up their noses,
As they smelt musick.

Tempest.

See also Ælian de Animal, L. 12. C. 44.

You

You shall perceive them make a mutual stand
 Their savage eyes turn'd to a modest gaze,
 By the sweet power of musick. Therefore the
 poet.

Did feign that *Orpheus* drew trees, stones and
 floods,

Since nought so stockish, hard and full of rage,
 But musick for the time doth change his na-
 ture.

The man that hath no musick in himself,
 Or is not mov'd with concord of sweet sounds,
 Is fit for treasons, stratagems, and spoils;
 The motions of his spirit are dull as night,
 And his affections dark as *Erebus* :
 Let no such man be trusted.

Merchant of Venice.

It was besides a custom, that long prevailed
 with a nation of the most refined taste, and
 truest politeness of the whole world, to initi-
 ate their youth from their early infancy, in the
 particular studies of harmony and musick (*a*);
 for by this method, they supposed the mind be-
 came formed to the admiration and esteem of

(*a*) Perspicuum est veterem illam Græciam studium operam-
 que rerum omnium merito impendisse maximam ut in primis
 adolescentes musica erudirentur, eorum enim animos molles ac
 teneros ad modestiam atque moderationem musica componi &
 temperari oportere existimabant. And again, Famaque est
 theatralem musam ignotam vetustioribus temporibus apud Græ-
 cos, tota enim hæc scientia ad cultum deorum, & ad disciplinam
 juvenum vertebatur necdum, ea tempestate, apud illos homi-
 nes extructo theatro. See the judicious *Plutarch* in his trea-
 tise concerning musick.

proportion

proportion, order and beauty, in moral as well natural subjects; by which means, they inferred the cause of virtue itself (which in their conception of things, was nothing else than the harmonious regulation of our own minds) was very much promoted. Musick also extends the fancy beyond its ordinary compass, and fills it with the gayest images: and therefore the divine lawgiver of that nation allows it a principal share in education, as it is observed to penetrate into the most secret affections of the soul, and frequently to produce such agreeable commotions in them, as abolish all discord, and finally, induce an harmonious œconomy of the subsiding passions (*a*).

Others of old supposed the human soul was imprisoned in this earthly state, and so much clogged with ignorance and oblivion, by its close and intimate connection with the body, that it had a certain stamp of folly, from the first hour of nativity, impressed on it. This original labe, or stain in general, they esteemed so great, that our ignorance, proceeding from it, made us act like fools or madmen in our present scenes of action, they, therefore, recommended the powers of musick, judiciously

(*a*) Τούτων ἕνεκα κοριωιάτη ἐν μουσικῇ τροφῇ, &c. Quamobrem præcipuum locum musica habet in educatione quoniam rhythmus & harmonia interiora animi subeunt, feriuntque vehementissime animum, decoram quandam figuram ferentia, per quam decorus & pulcher efficitur quisquis recte in musica eruditur contra vero si quis contra fuerit educatus. Plato Repub. Lib. iii. p. 38. Vid. Aristoxeni Harmon. Elementorum, L. iii. p. 31.

applied, to compose these disorders, as well as to assist our efforts, to shake off the impressions of early sense (*a*).

And so the bards employ'd their melodious strains, to dissuade rude mankind from bloodshed, and barbarous inhumanity, and induced them to unite in friendship, and associate in enclosed cities, for a mutual defence against their common enemies.

Silvestres homines facer interpretsque Deorum
Cœdibus & victu fœdo deterruit *Orpheus*,
Dictus ob hoc lenire tigres rabidosque leones.
Dictus & Amphion Thebanæ conditor urbis
Saxa movere sono testudinis, & prece blanda
Ducere quo vellet.

Thus we find (*b*), however extravagant the fashion of symbols, and manner of allegorizing, became at length among the antients; yet in its infancy it always implied some particular meaning, or had at least a shadow of probability on its side, the thing itself having, for the most

(*a*) Τὴν γὰρ δὲ ψυχὴν ἐπὶ ταύτῃ ἐξέψασαν ἀποβολῇ φρονήσεως, &c.
Animam ubi ad inferiora hæc repserit sapientia abjecta non nisi in ignorantia et oblivione existentem ob corporalem soporem terrore ac consternatione repletam, stultum quid ut in ipso nati-
vitatæ tempore existere, atque in hac vita secundum quasdam periodos plus minusve prudentia frui, hanc itaque ob multam ignorantiam et oblivionem nihil ab infania distantem modulatione componendam esse ducunt. *Aristid. Quintil. de musica, L. iii. p. 157. Meibom.*

(*b*) ΟΡΦΕΥΣ μὲν γὰρ τελευτᾷς δημῶν καλεθεῖξε

Φόνων τ' ἀπέχεσθαι.

Aristophan. Βαλρεαχ.

part,

part, a foundation either in morals or nature. Now, as we have already observed, the sages of antient *Greece* were instructed, and skilful in the rights and religious ceremonies of the *Egyptians*, it is not, therefore, in the least improbable, that several of their symbols and emblems of divinity were at the same time introduced, which served to express the influence and power of each sacred personage, and sometimes the connection and analogy subsisting between the subjects, over which such a deity presided. This consideration hath long induced me to suppose, that the ensigns of *Apollo Hygieus* (a) still extant on coins, and in antient sculpture, bear a type of somewhat more than is commonly attended to : for the lyre which he is usually seen to hold in his hand, and supposed to play upon, is intended to signify ; that musick teaches us wisdom, and inspires the soul with elevated and noble sentiments, and that it is also of great importance, and particular advantage to the healing art. But I will not dwell too long upon this conjecture, however probable it may appear to some persons ; but shall pass it over, to enquire how the mind comes to be affected by the charms of musick.

For my part, I am inclined to think, that the mind has a faculty, or disposition, to be

(a) Ἀπόλλωνος ἄγαλμα κιθάραν ἐπὶ χειρῶν ἔχον Πλάττεισι. Suidas. See Bartoli *Gemme Antiche*, Spence's, *Polymetis*, and others.

pleased, or displeased with certain airs, or systems of sounds, on the same principle as she is delighted with, or dissatisfied at the different perceptions of every other sense; and to me it seems equally inexplicable, to shew accurately, why a man on perceiving by his organs of hearing any combination of sounds, should discover in himself particular sensations of mind at the time, as that, when his organs of sight being sound and intire, he should by directing his optic axes to a point, immediately receive an impresson on his mind of that object which is external to it.

But according to some philosophers, the cause seems to depend on a certain law of our minds, whereby, upon the perception of uniformity amidst variety, we are necessarily forced to a degree of approbation, in proportion to the absolute quantity of uniformity, amidst the greatest degree of variety (*a*).

Thus the most generally affecting compositions in musick, are made up of divers notes, whose vibrations regularly coincide with each other, and are called by musicians, unison notes (*b*). For two vibrations of any octave coincide

(*a*) See the excellent enquiry concerning beauty, order, harmony and design.

(*b*) When a musical chord is once touched, it continues by its elasticity to vibrate, and these vibrations cause an undulation and tremor in the circumambient air, which every way diffused to a considerable distance, strike upon other chords of the same instrument or of any other, within the sphere of its activity. All the strings then, that are in unison proportion

(as

coincide with one vibration of that note to which it is an octave, and two vibrations of an octave coincide with three of its fifths. The like is by experiment found true of the other concords. In this consonancy, the mind perceives a very striking uniformity amidst the amazing variety of sounds. And from this cause, added to a certain association of ideas, either grave, pleasant, melancholy, or otherwise, necessarily excited in us at the simple perception of different sounds, the mind is expanded or contracted, and its images heightened or diminished, by the charms, or influence of sound, just in proportion as these circumstances concur together at that time.

——Pectus inaniter angit.

Irritat, mulcet, falsis terroribus implet,

Ut magus——

(as all the octaves, thirds and fifths are) with the vibrating chord, make an imperceptible vibration in the same time, and all restore themselves to their former state, precisely in the same little point of time. In the next succeeding period of time, the subsequent vibration communicates a small additional impulse to the unison chords: this at the third vibration is considerably increased, and so on, till at last the sum of the impulses taken together, as conspiring in the same direction, cause a visible motion, and audible sound of the unison strings: but the other chords are differently affected, for though the tremors of the air act upon them in the first period of time, yet as they do not restore themselves precisely in the same point of time, some being relatively slower, others swifter in their vibrations, the additional impulse in the second period of time, must necessarily counteract the former, and the succeeding impulse destroy the effects of the two preceding: so by the continuance of forces in opposite directions, all apparent motion will be lost, and the sensible effects of sound from it immediately cease.

Herein

Herein, say they, consist the charms of sound ; and as the capacity of comparing certain parts to a whole, is found prepollent or deficient in any person ; so is the degree of pleasure, or absence of it experienced upon hearing the notes. The acuteness of this capacity, or (as it is sometimes called) *internal sense*, is that which constitutes what we eminently distinguish as *taste*, whence the poet, painter, and statuary, and every class of the truly curious part of mankind, derive their refined pleasures, so incomprehensible to vulgar minds.

Again, we acknowledge another source of pleasure from musical compositions, as they are considered the exact imitation of natural sounds. For as painting represents the appearances of natural views and objects, the passions and characters of men and the like ; so the imitative power of musick breathes forth the airs, tones, accents, sighs, and inflections of the voice, and in a word every sound in nature, which usually impresses certain sentiments and passions of the mind : but these must surely have a more extensive power than the most persuasive eloquence, seeing all words derive their signification and force merely from custom and vague fashion ; whereas natural sounds convey an universal expression and energy from the simple dictates of unbiassed nature.

C H A P. II.

Of the operation of musick on the bodily organs.

BUT to return to the consideration of my subject, as I have already attempted to explain the influence of musick upon the mind : it now remains to account, how it affects the body, and here I must beg leave to dissent from that opinion, which ascribes its operation merely to a mechanical undulatory pulsation of the air, on the extremities of the nerves. I shall therefore proceed to shew what extraordinary commotions it excites in the mind, and what remarkable alterations, this, as it in a good measure superintends, and actuates the vital and natural functions, will produce on the Body.

It's observeable as the temperament and complexion of the body is, for the most part, a true index to the moral habits of the mind ; so the converse holds equally true, that the animal spirits and other grosser parts of the body, are greatly influenced by the habits and dispositions of the mind. For as hath been observed, nature herself has assigned to every emotion of the soul, its peculiar cast of the countenance, tone of voice, and manner of gesture. And the whole person, all the features of the face and tones of the voice answer, like strings upon

musical instruments, to the impressions made on them by the mind.

The story of the divine *Socrates* is well known, when *Zopyrus* the physiognomist declared him of a lewd and vicious disposition of mind, his followers immediately, for that reason, derided the art, as he was by all of them universally acknowledged, and known to be the chastest and most virtuous of all mankind. But the good Philosopher knew his own heart better than they did, and frankly declared himself by nature prone to these vices. But affirmed he had subdued them by the assistance of his sovereign mistress, and best guide, philosophy (a).

It is commonly farther observed, that the most choleric and amorous persons, sometimes suddenly invert their modes and scenes of life, and retiring from the busy world, to deep solitudes and gloomy cloysters, soon acquire a pale, pertinacious and religious complexion, which every one confesses to be the very reverse of their former habitude and appearance.

There are, however, limits beyond which this influence of the mind cannot avail, when the quantity, or quality, of any morbid matter affects the vital organs with too vehement a force; then is the law of the mind's influence on the material organs suspended, whilst she, poor

(a) Φημι γὰρ ὁμοίωτατον αὐτὸν εἶναι τοῖς Σειληνοῖς. Alcibiades de Socrat. in Convivio Platonis.

Vid. Galeni Librum "Ὅτι τὰ τῆς ψυχῆς ἦθη ἐπείγει τῇ τῷ σώματι κρείσσει.

feeble agent, is overpowered by a superior prevailing force. But to explain by what hidden means, and secret springs of action the mind comes to have any influence upon matter, is, I apprehend, a problem too difficult to be solved upon our present principles of knowledge, though it should even be granted for once, that we may have equally clear ideas of the properties commonly ascribed to spirit, as we can possibly have of those, of material objects; yet the essences of both are equally involved in obscurity, and may probably remain eternally inexplicable to limited beings.

This however, I think, I may be bold to say, that no mechanical hypothesis, that hath ever yet been, or ever can be hereafter, thought of, to explain the vital functions, or generation of any perfect animal, will be sufficient to solve appearances. It is certain, the life of every perfect animal is preserved, just as long, and no longer, than the circulation of the blood, and other fluids, is continued at least partially through the heart, arteries, veins and nerves. By mechanical accounts it appears, that a certain quantity of motion is impressed on the fluids, by the contraction of the heart and arteries, which being carried round in a circle, is brought back again to the first movers with its whole force undiminished: As for the nerves, they cannot give a new impressed force, greater than the quantity they received from the circulating fluids, if it be derived from them: seeing that all motions,

and changes made in the motions of bodies, are always proportional to the impressed moving force. But the nerves, so far as we can judge, have no innate *conatus ad motum*, or force of their own, but their action is intirely dependent on a certain effect produced on them, by an uninterrupted course of fluids through the vascular system; that is, on a moving force, impressed by the contents of the arteries.

Now if the motion caused by the action of the nerves, be communicated from the blood vessels, at most it could but give the same quantity again to the heart and arteries as they had before. But from the loss of motion in all machines, especially in so complicated a one, as an animal body is, less must be imparted to them each round, so that the heart itself would languish in a few revolutions of the blood, and all the vital functions would quickly terminate of themselves. Again, if the moving power in the nerves be derived from the blood, it must be in the brain; but then immediately at its separation therein, it is under different laws, distributed in different courses, and determined in various inexplicable ways: this new direction must be the effect of another power, so that though the material constituent substance comes from the blood differently modify'd, it is actuated by another cause, governing and presiding over it.

Besides we often observe a greater motion, or additional impulses actually given to the blood, from an augmented contraction of the heart,

and an accelerated vibration of the arteries, and these suddenly occasioned by violent agitations of the mind, but most remarkably so in the passions of anger, revenge and the like. On the contrary, when the mind is affected with love, or deep contemplation, the motion of the heart becomes slower, and the pulse languishes and almost dies away. This then shews the insufficiency of every hypothesis, that necessarily supposes the same invariable quantity of motion to be always maintained.

From this reasoning then, it seems to me absolutely necessary, in order to preserve the same quantity of motion at any two points of time in an animal body, that an additional impulse be communicated to the first moving causes in a second period of time, to counterbalance and make up for the loss of motion, necessarily occasioned by the friction of the particles of blood upon the sides of the vessels ; but there is a second cause of a loss of motion in the blood, arising from the apparent mechanism of the arterial system, for no sooner does the heart emit its contents, than a part is forced off in a direction nearly at right angles, to the axis of that artery in which the first direction of motion was communicated, and in its farther progress, the ramifications of the arteries form all possible kinds of angles with their trunks, sometimes being very acute, now right, and in other parts they are quite obtuse ; so that the globules of blood striking upon the angles, these

arteries make with their trunks, and none of them being perfectly elastic, the blood I say must necessarily lose part of its motion in them, but the number of the ramifications being indefinite, the absolute loss must be upon the whole much greater, than at first one would imagine it possible arising from that cause. There are other reasons which might be mentioned from this consideration, that the sum of the areas of the tranverse sections of the arteries exceeds by far the area of a tranverse section of the aorta: And lastly, there is a cause of retardation of all fluids in motion, especially such as are of a viscid texture, arising from that power which seems to be distributed to all bodies, and obliges them to endeavour uniting to such as are contiguous with them; such is the power by which a drop of water is a while suspended to the edge of a glass. Now it is plain, the force of this attraction is a certain determinate quantity, for if the weight of the drop exceed the attractive power of the glass to the drop, it will be instantly separated from the glass; but if the surface of the glass be made larger, a much heavier drop will be suspended by the attraction being increased. This doctrine is obviously applicable to the inner concave surface of a conical, or cylindrical tube. Let us then consider that the heart, and all the arteries in every point of time, exert a determinate quantity of this attraction, and as the vessels diminish in diameter, so the attraction of their sides to
the

the transient blood is augmented ; but in the extreme capillaries, the *nifus* towards union is very great, for the attractive force of exceedingly small particles of matter to each other is quite indefinite ; so that the loss of motion from this cause only considered, is as the factum of all the attractions from every point of the vascular system, or of the whole internal surface of all the vessels ; but this has already appeared to be very great in each capillary tube. Consequently the sum of all these forces taken together, must in a little time, counteract the first impressed momentum of the blood. From all these considerations, it appears sufficiently evident to me, that the mechanical accounts hitherto given of the circulation of the blood, are altogether insufficient to solve the phenomena. I shall not take up much time in shewing the extravagant absurdity of the Epicurean hypothesis of the mechanical formation of an animal body, for even granting the postulatum of a certain *conatus ad motum*, or undirected force impressed on infinite matter, how many powers of infinity must be brought in, to form at the same time every vital part of an animal body ? For if the heart were only a simple organ, there would be a chance scarce of one to infinite, that it should be formed exactly as at present in any animal. Again, that the brain which is of a more complicated frame than the heart, should be formed regular with all its numerous vessels of different dimensions precisely

what they now are, there are as many separate chances of infinity to unite against it, as the sum of all the vessels taken together ; but the laws of hazard determine against the possibility of such a series of effects thus regularly produced, and then how much more so, when the almost infinite variety of all the other parts in any animal body, are admitted under consideration. May we not then conclude it absolutely impossible, and altogether absurd to suppose, that all the powers of undirected force should ever effect such a complex machine, as the most imperfect animal even in one instance. Besides (to use the ingenious Dr. *Porterfield's* argument after *Picairn*) in the generation of an animal, there is a necessity, “ that the head, heart, arteries, “ veins and nerves, should be formed at the “ same time, which can never be done by the “ motion of any fluid what way soever moved : for the heart cannot move, unless animal spirits be sent from the head through the “ nerves into it. The animal spirits cannot be “ derived into the heart, unless the blood be “ squeezed by the heart through the arteries into “ the brain, so that it is evident, the head and “ heart, the arteries, veins and nerves, must “ all be formed at the same instant, and not “ successively, if the animal is produced mechanically. But this is altogether impossible, “ for no motion of any fluid or fluids howsoever “ disposed, can form all these at the same time, “ and we know all the internal mechanical “ actions

“actions of animals are performed by the force
 “of their circulating fluids.” From these
 and such like considerations, it is evident that
 an animal cannot be produced mechanically,
 but must be the active workmanship of some
 immaterial cause (a). Now seeing this is the
 case, why so great concern should be shewn
 to reduce all to mere mechanism, and to ex-
 clude an intelligent and active principle from
 having any share in the government of those
 motions on which life depends; and why it
 should be thought that these motions should
 never stand in need of new impressions from
 some such vital principle as at first set them
 a going I cannot so easily conceive? Is it not
 more reasonable then to conclude in the opi-
 nion of the Platonist of old?

*Spiritus intus alit, totosque infusa per artus
 Mens agitat molem et magno se corpore miscet.*

C H A P. III.

*Of the power of Musick in disorders of the
 mind.*

HAVING thus made it probable, *à pri-
 ori*, that the mind greatly influences the
 vital and natural functions, it remains to con-
 sider some facts, *à posteriori*, and to shew from

(a) See Med. Essays.

them how far in certain diseases, by composing the disorderly affections of the mind and spirits, the health and conservation of the body may be maintained.

Musick composes the motion both of the animal spirits and (a) mind : and *Plato* was of opinion that a well regulated and sound body had a closer connection and dependence on the influence of the mind than the mental affections had on the natural temperament of the body.

In the first place let us remark that to preserve perfect health of body, and a sound state of the animal nature in us, 'tis not only requisite that the stomach, bowels, and other organs should rightly concoct, digest and assimilate the aliment into wholesome juices : but it is farther necessary, that the superintending faculties of the mind be for the most part well-balanc'd, without an undue bias from any particular affection, which being too far strain'd, diminishes proportionably the vigour and constitution of the whole ; for every turbulent passion of the mind is indicated by a peculiar alteration in some parts of the animal frame at that time. “ Thus the passion of fear de-
 “ terminates the spirits to the muscles of the
 “ knees which are instantly ready to perform
 “ their motion by taking up the legs with in-
 “ comparable celerity, in order to remove the

(a) Vide Marsi. Ficini. Comment. in Platon.

“ body out of harms-way. (a)” But it is the nature of fear, as well as of all the other passions, to increase and become habitual by indulgence ; and in consequence of this, all its effects upon the body are produc’d, in like manner more or less, according to the frequency of it experienc’d in the mind : for the organs of the body are under a sort of mechanical necessity to keep pace with the sensations of the mind. The truth of this observation is confirm’d by various instances from other parts of the body : thus the mind by experience is convinc’d ’tis of the highest importance to its partner the body to preserve the eyesight strong and lasting ; therefore whenever any object suddenly approaches too near our eyes, we, for the most part, find it nearly impossible to prevent the eyelids from closing at once, although the motion of these parts, in the very infancy of life, was intirely dependent on the will ; so the uniform direction of our eyes is now become quite habitual to us, and independent of the direction of the mind, which immediately after birth was altogether free and undetermin’d (b).

But, to return to the passion of fear, the wise people of antient *Greece* took the best method in the world to prevent its ill consequences upon their soldiers in times of publick dangers ; for when their armies took the field,

(a) Vide Des Cartes de Metu.

(b) See *Porterfield's* excellent essay on Vision, Med. Ess.

they never went unprovided of the best musicians, who, by their martial strains, inspired the soldiers with a kind of mechanical courage never experienced in their enemies (a).

Plutarch tells us in his life of *Lycurgus*, that when the *Spartan* army was drawn up in battle-array, and the enemy was near, the *Spartan* king sacrificed a goat, commanding the soldiers to set their garlands upon their heads, and the pipers to play the tune of the Hymn to Castor, he himself advancing forwards began the Pæan, which serv'd for a signal to fall on. It was at once a delightful and terrible sight to see them march on, to the tune of their flutes, without once breaking in on the order, or confounding their ranks ; no discomposure of mind or change of countenance was seen, but on they went to the hazard of their lives, as unconcernedly and chearfully as if it had been to lead up a dance, or hear a concert of musick. And the like custom is presery'd even in our days to good purpose ; for many soldiers have candidly owned to me, that thoughts of meeting death in battle, sometimes damp'd their generous ardor to engage, 'till the martial trumpet and other warlike instruments had roused their sinking spirits,

(a) *Crætes ad Citharam dimicabant Lacædemonii ad tibiae nec ante adgrediebantur fata priusquam illis contingeret litare musis. Quid Amazones ? Nonne ad Calamos arma tractabant, quarum una concipiendi studio venerat, cum Alexandrum salutaret, donata tibicine ut magno munere gratulata discessit. Martian. Capel. de Nupt. Philolog. Vide Plutarch & Polybium.*

and inspir'd them afresh with hopes of victory or contempt of death.

Besides the passion of fear, there are many others that induce strange disorders of the body, when the commotion of the mind is rais'd to a violent excess; but I do not here mean to treat of the undue bias of the affections in the rigorous high stile of the Stoicks, and with them conclude at once, that every man who is not perfectly wise is therefore a mad-man (*a*); and by shewing that music may be of the highest service in maniacal disorders, rashly take upon me to infer, that it may be, for the same reason, applied with success to curb all unbounded passions, and to reduce the extravagant fallies of temper; this is too wide an ocean for me to launch into, especially as the profest masters of this science, one may fairly hope by this time, have laid down sufficient rules and charts to steer by.

But as the most violent passions of the mind produce the most apparent alterations on the body, I shall briefly touch upon such of them as have been known to be allay'd by musick: these then are anger, grief, excessive joy, enthusiasm in religion or love, the panick of fear, and such-like. Of the one of these we have already treated, we next proceed to the effects of anger.

(*a*) Quem mala stultitia & quemcunque inscitia veri
Cæcum agit, insanum Chryssippi porticus & grex
Autumat, hæc populos, hæc magnos formula reges
Excepto sapiente tenet. Horat. Sat. 3. l. 2. v. 43.

The antients attended minutely to the workings and agitations of the human mind, and noted down the effects of each individual upon the body: some went so far as to say, that every extravagant perturbation of mind, induced a particular bodily disorder (*a*); but most of them agreed to be a perfect madness, though of a short duration. The symptoms of each are precisely the same; the countenance is deform'd, the brow wrinkled, the eyes red and fiery, the cheeks glow, the teeth chatter, the tongue forgets its usual accents, and the breast heaves with anxiety, strong palpitations seize the labouring heart, and drive the blood with renewed force to the extreme parts of the body; so that there is no organ in the whole machine but is variously affected by the determination of the blood and spirits at that time towards them; the effects of it however on the lineaments and traits of the face are so apparent to every spectator, that 'twas a common remark of old, that the frequent indulgence of a wrathful disposition effaced the native beauty of the human countenance so much, that it could never be retrieved (*b*). The observations of medical writers, concerning the pernicious consequences of anger, are too numerous to produce in this place. Let any one who is curious to know several remarkable facts about it, con-

(*a*) Πάσαν γὰρ, &c. Omnem animi perturbationem parvam epilepsiam dixerunt antiqui. Aristid. Quintil.

(*b*) Vide Antonin. Meditat. l. 7. §. 24.

sult *Hildanus*, *Bartholinus*, *Acta Medica Hassnienf.* *Bonetus* and *Tulpius*. These writers will furnish a sufficiently numerous collection of histories, where hæmorrhagies, convulsions, palsies, inflammations, fevers, watchings and deliria, have been the consequences of giving way to this inordinate passion ; nor is it much to be wonder'd at, since anger always excites an extraordinary heat and ebullition of the blood (a), by which means these disorders are frequently produc'd.

Homer makes *Ulysses's* hæmorrhagie stop'd by the charms of music (b) ; and *Cato* tells us that luxated joints were eas'd by the harmony of sounds. So when *Antigenes* by harmonic airs had rous'd *Alexander's* martial genius to such a pitch of madness, that he snatched up his lance and with it was prepar'd to fight in the midst of his friends ; the cunning artist soon chang'd the measure and founded a retreat, at which his violence subsided, his transport ceas'd, and he peaceably again compos'd himself to the enjoyment of his friends and the feast (c).

(a) Θυμός δέ ἐστι ζέσις τῷ περὶ καρδίαν αἵματι.

(b) Ωττειλὴν δ' Ὀδυσῆϊ ἀμύμονι ἀντιθέοιο
Δῆσαν ἐπισαμένως. ἱπαιοδῆ δ' αἶμα κέλαινον
Εσχέθον.

Odyss. τ.

(c) Vide Plutarch. de Fortuna Alexandri. l. 2.

Quid de Clinia Pythagorico, qui quoties ira se inflammari sensit toties ad lyram tanquam mali certissimam medicinam convertit. Nicod. Frischlinus in Oratione pro Musica. pag. 204.

So *Ericus* king of *Denmark*, by a certain musician could be driven to such a fury as to kill some of his best and most trusty servants.

We observe in the next place the passion of sorrow discover itself by an abject countenance, the eye-balls sunk into the head, the cheeks fallen, and by frequent sighing and involuntary tears: at that time the pulse is slow and weak, while the heart feels cold, and sometimes palpitations are found with an uncommon sensation of stricture and obstacle to the blood; and as the mind is well known to have great influence upon the upper orifice of the stomach and liver, no wonder that want of appetite, a bad digestion, anorexies, and particularly jaundices, with other disorders of the liver, are often found in persons oppress'd with grief, sometimes a slow nervous fever of the worst sort attended with constant waking, anaesthesies, stupidity and fullness.

That the power of the imagination is able in many cases to remove certain diseases, will not, I believe, be questioned by any one who maturely considers the numerous tribe of disorders, in which amulets and charms are commonly said to have effected a cure, when the physician's skill hath been tried long time in vain. Who is so unlearned in the art of healing, that is ignorant of a charm against the tooth-ach? Or, what good lady (if need were) could not furnish at least half a dozen examples in her own country parish of obstinate agues, and as bad jaundices which were removed by
her

her own cure. Many of the facts are incontestible ; and, if we must needs reason upon them, it seems more philosophical to refer them to this cause, than to any imaginary occult sympathy of bodies. *Philotinus* the physician cur'd a man that fancied himself beheaded for a tyrant, by clapping a great leaden cap suddenly on his head, which making him sensible of a new weight there, induced him to believe he had regain'd his head, and so recover'd (a).

Besides, every physician must have taken notice of what importance it is in practice, to raise and beget a bias in his patient's mind in favour of himself ; for if he is deficient on this part, medicines may be long administred by him in many cases to little purpose ; whereas if another physician, in whom greater confidence is repos'd, being at that time call'd in, only pursue the same intention of cure, and even prescribe the same remedies as before, the latter shall be applauded for his superior skill, and the former be less esteemed than before. Whoever would know more of the power of the imagination, may consult the prime and chief philosopher of all ages, the Lord *Bacon* in his *Sylva Sylvarum* (b). Seeing then the mind is so powerful an agent in particular diseases, I see no reason why the efficacy of

(a) Vide Alexand. Trallian. edit. Goup.

(b) See Mr. *Boyle* on the usefulness of natural and experimental Philosophy. And *Fienus* de viribus imaginationis.

musick should not be tried in many disorders which arise in the animal constitution, from an undue balance of the mental affections; for musick (*a*) composes the irregular motion of the animal spirits; and more especially allays the inordinate passion of grief and sorrow. (*b*) *Homer* knew this so well, that he describes the injur'd lover, the unrelenting *Achilles*, soothing his heart-felt grief for the loss of his mistress with the melodious strains of his harp.

To this purpose I shall relate a memorable history, communicated to me by a physician at *Edinburgh* of great learning and experience. A gentleman with his three sons were unfortunately engag'd in the rebellion of the year 1715, and, zealous for the cause, he had ventured the largest share of a considerable fortune in the service of his suppos'd rightful master. This, added to several other instances of his unfeigned attachment, had deservedly procur'd him the highest marks of esteem, from the Pretended Prince; however, when the rebel forces were routed at the battle of *Dunblain*, he had the misfortune to find two of his sons kill'd, and himself wounded in the

(*a*) Παρά δὲ τίσιν τῶν βαρβάρων, &c. Quinetiam apud barbarorum aliquos, in funeribus est adsumpta summas illas animi perturbationes modulatione aliquantum infractura. Aristid. Quintilian. de musica, l. 11. p. 65.

(*b*) Τὸν δ' εὖρον φρένα τερπόμενον φόρμιγγι λιγείῃ
Καλλὴ δαιδαλέῃ

: Τὴν ὅγε θυμὸν ἔτερπεν, αἶεθε δ' ἄρα κλέα ἀνδρῶν.

Iliad I. 7. 186.

hands of his enemies. Yet, in these circumstances, all due care was taken of his health, so that he soon made his escape, and was suffer'd to live in a private manner at *Edinburgh*; but there stung with obdurate pride and grief of mind, he fell into a nervous fever, which left him in so deep melancholy, that he refused the necessary support of food, and all discourse with the persons usually conversant about him : when all other remedies were excluded, his physician (who previously knew what delight he formerly had in playing on the harp) propos'd to the patient's friends to engage one of the ablest hands on that instrument, to approach him with such soft and solemn sounds, as were formerly known to give him most delight : his relations were under no difficulty to consent to the trial, and as soon as one or two pieces had been play'd, the patient discovered an uncommon emotion both of body and mind, and, shortly after, reproach'd their presumption in so disturbing his meditations. When this point was once gain'd, the doctor enjoin'd the master to play a while every day within audience, 'till by degrees the sick person was thereby induc'd to speak of ordinary things ; and shortly after to take food and such medicines as were requisite in his condition, 'till at length he perfectly recover'd his former state of health. Now it may perhaps seem strange to assert, that, like o-

ther inordinate affections, excessive joy produces various changes on the body ; sometimes convulsions, involuntary tears, swoonings away, and even in other cases death itself. Thus *Aristotle* tells us of *Polycrita*, a noble lady of *Naxus*, that suddenly expired in raptures of joy at some unexpected good fortune (a). *Livy* too relates, upon news being brought to the city of the *Roman* forces being totally defeated at the battle of *Cannæ*, that a certain old woman fell into a sudden transport of grief and sorrow, at the report of her son's death among the rest ; but this soon after proving false, by the unexpected appearance of the young man in the city, the poor woman was overcome with excess of joy ; and immediately at the unhop'd-for sight of him, fell down dead (b). Many similar instances might be produc'd, if it were necessary, of more recent date, to corroborate the truth of the foregoing assertion ; but that most people of common observation must have remark'd something of this kind, to have occur'd within their own notice, which makes it needless at present to enlarge. How far the power of musick, sufficiently attended to, may serve to alleviate this affection, when too far strain'd, or too strong, may be better illustrated by the following relation of Mr. *Stanley*, a gentleman deservedly eminent in his profession. A child not two years old, born of musical parents, was one day remarkable for

(a) *Livy*, l. 22. 7. 13.(b) *Aul. Gell.* l. 3. c. 15.

mirth and good humour, upon hearing some sprightly airs of musick, this gave occasion to the father and Mr. *Stanley* to try the effects of different measures ; when they had rais'd the infant's spirits very high by this means. But as the chromatick and graver strains began, the child grew melancholy and sad, which temper was remov'd as soon as pleasanter music was play'd. Thus, as I am inform'd, they could solely by this art raise, and allay joy and grief, by turns, in the infant's mind.

Besides these distempers of mind which influence the body, there are yet others which arise from false conceptions about religion, the simplest of all subjects, the mind can be employ'd in ; every nation however hath at one time or other experienc'd publick disadvantages from the visionary dreams of enthusiasts, in what they falsely call religion ; for the mind once unhing'd from the solid basis of right reason, passively yields to the transports of an overheated imagination, and upon a bare supposition of a Divine presence, its views and images become too vast and immane for the scanty human vessel to contain. When this is the case (as a noble author (*a*) expresses it) the extasies shew themselves outwardly in quakings, tremblings, tossings of the head and limbs, agitations and (as *Livy* calls them) fanatical throws or convulsions,

(*a*) See a letter concerning Enthusiasm, p. 50. vol. I. of *Characteristicks*.

extemporary prayer, prophecy, singing and the like. The aspect of the face is then more striking, and every glance and feature of the person supposing himself so possessed, would on any other occasion, pass for a symptom of down-right madness ; and 'tis, I presume, from the near resemblance of these two passions, that some countries (slaves to superstition) pay even in our days a devout regard to all mad people without distinction. It will, indeed, be found upon enquiry, that people of the most thoughtful and grave disposition of mind, and of a bilious temperament of body, have most frequently given into the opinion of such impulses. Now these circumstances, above all others, naturally promote that melancholy, which so constantly accompanies all enthusiasm.

Besides superstition, which is always ingender'd on a slavish fear of something unknown, is incident to all men of weak and wicked minds ; so that it was no hard matter for cunning and designing men, such as *Zaleucus*, *Minos*, *Zoroaster*, *Lycurgus*, *Numa*, *Mahomet*, and others, to establish their precepts, under pretence of a divine authority ; and they might, without very great difficulty, work themselves, as well as others, into a persuasion that strange apparitions and visions were seen, prophetick voices heard, familiar conversations held with spirits, and revelations received from heaven. For say some good men, why should it appear strange that God, who places not his affecti-

ons

ons on magnificent temples, the pomp of offerings, or any thing external to us, should condescend to dwell with the virtuous, and entertain a spiritual conversation with wise and devout men? But when we soberly consider how much the unity, and beautiful simplicity in the scheme of Providence would hereby appear confus'd and irregular, we have great reason to guard against too much credulity; especially as the vilest impostors, *Alexander of Pontus* in *Lucian's Pseudomantis*, *Mahomet*, and others, can assume precisely the same mechanical operations on their bodily organs, by the agitations merely of the animal spirits, what criterion is left to judge by? for the tokens of an imaginary divine impulse are the same as the most real; and when the narrow vessel can no longer hold its fermenting spirits, then, even at this time of day, the extasies appear in the same odd gesticulations as ever. No external difference can be discovered between the Sybil possess'd, and a modern fanatick of any denomination.

*Subito non vultus, non color unus,
Non comtæ mansere comæ, sed pectus anhelum
Et rabie fera corda tument, majorque videri
Nec mortale sonans afflata est numine quando
Jam propiore dei.*

The inspiration in antient times was utter'd in verse, in pompous words, similitudes and

metaphors, at the sound of musical instruments ; but in our days, a strained voice with an affected twang through the throat and nose, supply the want of musick, but too often has the same rapturous effects on the hearers.

One of the ancients, who hath elegantly treated the present subject declares, “ that musick
 “ was studied among them for divers good reasons, some in high life by it curbed their licentious appetites, in adversity it cheered their sorrows. The visionary, and such as were said to have seen some form of divinity, were secured by it from any farther conceits of supernatural impulses and inspirations ; and though the charms of musick did not equally affect common people with those of a more refined taste, it was judged expedient, whenever this was the case with any one, to administer some suitable relief, if there was only a bare probability of making them again useful to the public ; but they rightly judged it beyond the power of oratory, and out of the reach of calm persuasion, to effect a cure in disorders of the mind ; for grief is often known to bring on incurable diseases, unless some comfort be administered, and even divine impulses, if they exceed the bounds of moderation, do not proceed as they ought, when they cherish superstition and ill grounded fears.
 “ But musick is properest of all remedies in each of these disorders, as it gradually reduces
 “ the

“ the mistaken to a right constitution both of
 “ body and mind (a).”

We have moreover the authority of sacred writing on behalf of what is above advanced, for when the spirit of the Lord departed from *Saul*, and the evil spirit from God came upon him, *David* took an harp and played with his hand, and *Saul* was refreshed, and was eased, for the evil spirit departed from him (b). Thus we see that musick is the best composer of a fancy unsettled in these matters.

But the consequence of extravagant love is not to be described by any eloquence of words. Let us, to be convinced of this, only

(a) Et certe non ab una causa nos ad modulandum converti viderunt, sed alios in rebus lætis a voluptate, alios in adversis a mœrore, sed alios a divino impetu ac adflatu, mentis evocatione defixos (κατεχομένους ὑπὸ ἐνθουσιασμῶ) vel etiam his inter se mistis secundum aliquos casus & circumstantias, dum aut pueri ob ætatem hujusmodi adfectionibus, aut etiam ætate provectiores ob naturæ imbecillitatem subjiciuntur. Porro licet hoc non æque omnes moveret ut sapientes ; ac licet non omnia cantus provocaret ut intemperata, attamen his contingentibus, etiam qui talibus detinerentur medicinam afferre conveniebat, si utiles cum tempore & honesti cives efficiendi essent, neque enim fieri ullo modo poterat ut ab oratione profectam medelam consequerentur qui ab animi perturbationibus essent molestati. Voluptatem enim esse fortissimam escam qua & rationis expertes animantes capiantur, ut planum faciunt pastorum fistulæ & caprariorum pectides. Rursus mœrorem multos in insanabiles conijcere morbos nisi solatium adhibeatur, Divinos item impetus nisi intra modum consistant, haud recte procedere ; quod superstitiones & sine ratione timores incutiant. Horum cuique convenientem medicinam musica adhibet inscios paulatim ad rectam constitutionem subducens. Vid. Aristid. Quintilian. L. ii. p. 65. Edit. Meibom.

(b) 1 Sam. xvi. 23.

reflect

reflect on the wisest and most distinguished characters of men, philosophers, lawgivers, statesmen, and whatever other illustrious names occur in history, and I fancy we shall find these in the character of lovers quitting the severity, constancy and truth of their former manners, and declining into a condition of folly at least, if not real madness. *Homer* is by the wisest men allowed to be one of the greatest masters in morals, and is universally agreed to have drawn his characters from pure nature, and from the heartfelt emotions of the human mind (*a*).

There is then no room to doubt, that even the wise prince and careful father of his people, *Agamemnon*, whilst in love, came to betray the greatest impotence of mind, and degrade himself equally with the dissolute and effeminate *Paris*. For he is not ashamed in an august assembly of heroes, to own an extravagant passion for the captive *Chryseis*, and plainly tells them he loves her much better than his own lady *Clytemnestra*, even in her bloom of youth, and in the innocence of her virgin charms, he chides, is pettish, and offended at the good priest for declaring the will of heaven, which counteracts his fancy, and in a childish humor

(*a*) Trojani belli scriptorem maxime Lolli
Dum tu declamas Romæ Prænestæ relegi

Qui quid sit pulcrum, quid turpe, quid utile, quid non,
Plenius ac melius Chrysippo et Crantore dicit.

Horat. L. i. 2 Epistol.

quarrels

quarrels with his friend the fierce *Achilles*, thereby protracts the war, and is the cause of untimely death to many thousands of his innocent people.

What is related of *Lucretius*, that dispassionate Epicurean, is not unworthy our notice in this place, who could calmly analyse the joys of love, and resolve the *Spes animi credula mutui*, with all its other moral incitements, into the lowest and most sordid part of it, *Facere humorem collectum in corpora quæque*. This anti-enthusiastic poet, in his turn, was a fatal instance, that speculative and abstracted principles have but little weight in the scales of common actions; for after disclaiming the passion, and degrading it below its real dignity, he himself went mad for love, and in his disorder put an end to his own life.

Thus we often see an excess of this ungovernable passion makes men insensible to every consideration, of how great importance soever, but what concerns the fair object

——— who alone

Heard, felt and seen, possesses every thought,
Fills every sense and pants in every vein.

But if in this state jealous thoughts invade the lover's mind, then trifles lighter than air become strongest proofs of each ill-grounded fear, and in this deplorable state the repining mortal is continually labouring to complete his own utter ruin.

Factor,

*Factor, crucior, agitor, stimulator versor in
 amoris rota miser,
 Exanimor, feror, differor, distrabor, diripior,
 ita nullam mentem
 Animi habeo : ubi sum, ibi non sum : ubi non
 sum, ibi est animus.*

This is a true picture from *Plautus* of that rack of mind which often produces downright madness, and nothing bids so fair to remove it, in some particulars, as the melodious charms of just composition. *Seneca*, to this purpose, relates, that *Augustus Cæsar* had an amour with *Terentia*, *Mecænas*'s wife, which being discovered by the husband, gave him, though a polite courtier, the deepest concern ; and caused him for his honor's sake to obtain a divorce ; but this separation from his inconstant spouse threw him into a profound melancholy, with constant watching, which neither the powers of wine, nor the gentle murmurs of falling waters (commonly most effectual remedies in such cases) could in the least prevent ; so that during three whole years he never slept in the night time, till at length he was charmed to repose, by soft and soothing strains of distant musick.

This practice was in high repute among a sect of philosophers, formerly much esteemed all over *Italy*, for the *Pythagoreans*, as soon as the morning dawned, played on their lyres to urge them

them to the active duties of life, and when evening came they composed their cares, after the fatigue of the day, by some pleasing strains of good musick (a).

C H A P. IV.

Concerning musick in the cure of diseases, compounded of affections of the body and mind.

I shall now proceed to treat of such disorders, as primarily depend on the inverted order of the animal nature, and evidently proceed from some perturbation in the body; for when any laws of the animal œconomy are but partially disturbed, the constitution of the whole sympathises accordingly.

In the first place it seems to be a general law of our nature, that all simple perceptions of the mind are primarily the effects of an impulse from without, some how or other impressed on our organs of sense; which in their turn convey the images of external things to the sensitive part in us, where the mind resides; for the mind perceives nothing but what is present with it; but when a similar impulse is made on our sensory, from the fluids themselves so modified

(a) Pythagoreis certe moris fuit & cum evigilassent animos ad lyram excitare, quo essent ad agendum erectiores, & cum somnum peterent ad eandem prius lenire mentes, ut si quid fuisset turbidarum cogitationum componerent.

Cicer. Tusc. Quæst. 4.
by

by an alteration of some internal parts, similar causes will have like effects, and the same kind of perception will be present to the mind; and if this modification of the sensitive organs be sufficiently strong and lasting, it will consequently preclude every sensation besides, while the mind is only attentive to this creature of its own fancy. When this is the case with any one, he may be said to be in a delirium, if at the same time he is awake and totally unmindful of most things without him, though his attention be roused and solicited towards them.

The presence of this disorder always supposes a morbid affection of the brain or nerves, arising either from obstructions, repletions, or inanition, an irregular motion of the fluids, and such like causes.

These or such others taking place in the brain and nerves, cause the patients to do many ridiculous and foolish things; they first become suspicious of their best friends, and in a word, entertain such extravagant opinions of every thing about them (*a*), that they too often attempt unthought of actions against themselves and others, falling into immoderate laughter or crying (*b*), they turn very sullen, and are of-

(*a*) — Est genus unum

Sultitiæ nihilum metuenda timentis ut ignis
 Ut Rupis fluviosque in campo obstare queratur
 Alterum & huic varium & nihilo sapientius ignis
 Per medios fluviosque ruentis, clamet amica
 Mater honesta, soror cum cognatis pater uxor. Horat.

Quæ deliria cum risu sunt tutiora, quæ cum studio periculosa. Aph. 53. Sect. vi.

ten displeased, or again reconciled upon the slightest occasions; sometimes they grow quite implacable in resentment, and at last come to dwell on the same object so long, till the mind has imposed a sort of mechanical necessity on the organs that excite this idea, still to go on in the same manner; hence it sometimes happens, the person shall strive with his utmost efforts to get rid of that particular thought, yet it will in spite of his endeavours rush upon his mind, and dwell with him continually, sometimes the whole external face of things is changed. “ Some fancy themselves transform-
 “ ed into earthen vessels, others into cocks, en-
 “ deavouring at the same time to imitate their
 “ crowing. Some imagine, that they sustain
 “ the heavens on their shoulders like *Atlas*,
 “ and are every moment afraid of their falling
 “ and crushing them to pieces.” *Trallian* farther mentions a woman, who always kept her middle finger bent, fancying she held the whole world in it, on which account she made sad lamentations, fearing that whenever she should open or unbend it, the world would fall down, and all things be destroyed. All objects appear different from what they used to do, they smell, hear and taste, in an uncommon manner, and sometimes a malady of a different nature removes the former, for melancholy is the nurse of frenzy.

Ut lethargicus hic cum sit pugil et medicum urget.

The symptoms that attend this disease in a fever, are many and very extraordinary, but being too numerous for this place, I must refer such as would know them thoroughly to *Hippocrates*, the most faithful and judicious of all other medical writers, who left the world, upwards of two thousand years ago, a more useful and extensive knowledge of this subject, than the joint labours of all succeeding physicians have produced (*a*).

The general method of cure in this disease, accompanied with a fever, is to blister and bathe the feet in warm water; in some cases bleeding, vomiting, emollient clysters and purgatives are used to advantage, but the remedy, which of all other bids fairest to relieve the patient, is musick (*b*): As it awakes the attention in the most agreeable manner, and relieves the anxious mind, by substituting a more agreeable series of images; by which means it subverts that habit which was now become almost

(*a*) Vid. Hippocrat. Prognostic. sentent. & in Porrhet. Coac. Prænot. & passim.

(*b*) Siquidem igitur aut ex mœrore aut ob curam aut animi affectum quempiam vigiliis torqueantur: primum quidem id quod mœrorum facit, si fieri queat præscindemus, deinde etiam jucundiorum sonorum auditu cogitationem ab illis abducemus. Paul. Æginet. L. i. C. 98. Vid. Trallian. L. i. C. xii.

insuperable,

insuperable, and gradually reduces the mental faculties to the due standard of common sense.

Nor is medical history unfurnished with facts to confirm this reasoning; for it is related in the memoirs of the royal academy at Paris, that a gentleman eminent for his knowledge in musick, was seized with a continual remittent fever, which on the seventh day was accompanied with a constant delirium, and loud exclamations of sorrow and fears, with continued watchings. Upon the third day of the delirium, the patient peremptorily insisted upon a concert of musick being admitted into the room where he lay ill; this the doctor with some difficulty at length consented to: and to his great surprise, as soon as the musick began, the patient's aspect appeared with its usual composure, the convulsions ceased, and tears of joy overflowed his eyes, whilst he experienced a degree of pleasure unfelt either before or after, from the charms of musick; and what was well worth attending to, his fever was entirely suspended, while the comfort lasted, but all the symptoms returned immediately, when that was at an end. This unexpected event gave room to hope again for the same effects from a repetition of the musick, and upon trial the success was answerable to it, by removing both fever and delirium; upon this account the patient obliged the person who attended him to sing and dance before him every night, by which means,

in ten days time, he was restored to perfect health (a).

Besides the symptomatic delirium in fevers, there is another kind without a fever, called by the antients, *Melancholia*, (b) in which the mind's attention is more particularly fixed to one object than in other deliria. Persons of a fallow bilious complexion, and of an adust temperament, are most propense to this disorder, and especially *cæteris paribus* the inhabitants of warm climates, whose radical moisture is much dissipated by insensible perspiration, that abounds most in hot countries. Now the physical causes of this in the human body acting upon the soil, rivers and lakes of the places, may fill the air with mineral vapours, putrid exhalations, and other such like causes, several of which concurring may probably dispose the inhabitants of that region to diseases, both acute and chronical, which are rarely to be met with in others. The *pox* of *America*, the *vena medinensis* of *Asia*, the *bronchocele* of the people on the *Alps*, and the *elephantiasis* of the *Egyptians* serve to shew this (c).

The temperament of all animal bodies is surprisingly influenced by the qualities of the air

(a) Vid. Academ. des Sciences, l'Ann. 1707. Hist. p. 8.

(b) *Melancholia* vocatur medicis ille morbus in quo æger deliratur diu & pertinaciter sine febre eidem fere & uni cogitationi semper affixus. Aph. 1089. Boerhave.

(c) Est *Elephas* morbus qui propter flumina Nili
Gignitur *Egypto* in medio, nec præterea usquam.

Lucret.

they

they breathe; nor is it at all to be wondered at, seeing that air enters the blood by the food and aliment whereby they are sustained, and a certain vital principle is every moment of respiration absorbed by the lungs, and most probably convey'd into the mass of blood as far as the minutest vessels. But the air we breathe is a very heterogeneous fluid, consisting of pure aerial and watery particles, of exhalations from all animal and vegetable, as well as mineral bodies, and of an infinity of small animals, and theirs as well as the seeds of vegetables, which are constantly floating up and down through it. Besides the heat of the sun, and of the region through which the air passes, and the moisture of the country, all these being differently combined must produce alterations on the body; and when these heterogeneous particles get into the blood, and are conveyed with the circulating fluids, to the minutest vessels, they must variously affect the subtile organs upon which life and sense depend. This every one experiences in himself from the difference discovered in his own temper and mind, between foul and fair weather, a hot or cold day. Nor is this effect confined merely to the human species, for as the prince of Latin poets hath justly observed, all the animal kind partake in common of this surprising influence.

*Vertuntur species animorum, & pectora motus,
Nunc alios, alios dum nubila ventus agebat,
Concipiunt : hinc ille avium concentus in agris,
Hinc lætæ pecudes & ovantes gutture corvi.*

In confirmation of this reasoning it is observed, that at certain seasons of the year men are more disposed to particular actions than at others. Whatever excesses are committed at *Rome*, through the year, fifteen of twenty are observed to happen in the two months of excessive heat. By the bills of mortality of *London* I have collected, that five out of six people, who are guilty of self-murder, do it about the beginning, or towards the end of winter ; then we have for the most part the wind at north and north east, and a gloomy atmosphere, which I believe every body, who hath lived here any time, can bear testimony, greatly affects the spirits ; the public registers in certain courts of justice in *France* take notice, that some years have been remarkably more productive of extraordinary crimes than others, without any other apparent cause, either moral or physical, than the effects of the atmosphere.

Besides excessive cold produces melancholy, as the celebrated *French* historian *Du Thou* tells us concerning *Henry* the third of *France*, whose disease was always exasperated at the approaching cold ; the other extreme is its immediate effect, on other people in another country. So that from all these circumstances, I have no
room

room to doubt but that certain diseases are produced only in particular places, and these solely by the operation of the heat and air. It is too well known, that the healthiest European sailing to the continent of *America*, is no sooner settled a few weeks within a certain latitude, but he is seized with a most violent fever, which the *Spaniards* call *Tabardillo*; but if the patient survive the disease, it seldom returns, his juices being as it were leavened and assimilated to that air, which he constantly respire. And if an American *Spaniard* be brought to Europe, he is in like manner seized with a dangerous fever, and his case is precisely the same with the former. But the effects of different climates not only change the colour of the skin, and sound of the voice, but the moral habits of the mind are also by this means affected.

The descendants of the *Portuguese*, who about three hundred years ago settled colonies at *Cape Verd*, and on the western coasts of *Africa*, have not only lost all manner of likeness to their ancestors features; but the *African Portuguese* have short curled hair, flat noses and thick lips, just as the Negroes; and their colour is said to approach much nearer to them than our Europeans do.

Now if these grosser parts of the body in process of time are so changed by the climate, no wonder if the extremely subtile vessels of the brain should suffer greater alterations; on which thought, and what we call mind, seems imme-

diately to operate. But thought itself seems in us very much to depend on the organisation of the brain, and the motion of its contents; so that the genius of every nation must receive a bias some way or other from the temperature of the climate (*a*). Experience too confirms this by the example of most countries, where victorious enemies have appeared.

The *Gallo-Grecians* of old were a colony descended from a most daring and warlike people, the antient *Gauls*, whose character for bravery and courage will ever be admired, 'till the commentaries of *Cæsar* are no longer in repute; yet the descendants of this intrepid people, brought up in a foreign soil, a province of the lesser *Asia*, not long preserv'd the fire of their ancestors, but soon relaxed their discipline, and in every respect were the same effeminate, soft and unmanly race, as lazy luxury had before formed the *Asiatics* themselves.

The *French* at this day are by no means immediately descended from the antient *Gauls*, but rather from a more northern race; yet have they the same manners, customs, and characteristics as the gravest historians, *Cæsar*, *Livy*, and others, ascribed to the inhabitants of these parts in their days; such as a surprising readiness to imitate the performances in art of others, *Genus summæ solertiæ ad omnia imitanda, atque efficienda, quæ ab quoque traduntur aptissimum*. That fickle, gay and inconstant temper,

(*a*) Vid. Barclaij Icon Animorum.

so remarkable in that nation to this day, is censur'd by *Livy* and *Florus* in the antient *Gauls*. In the same manner the present *English* are descended from a promiscuous mixture of the old islanders, *Romans*, *Danes*, *Normans*, *Saxons*, and a motley composition of all other nations besides ; yet our characteristics are at present perfectly similar to what *Cæsar* and *Tacitus* relate of the antient *Britons* : an *English* husband at present is no more apt to be jealous than such a one was near 1800 years ago : the spirit of emulation against a neighbouring nation is not diminished in us at this day, from what it was in the time of *Agricola*. Nor is there, I hope, any danger that it may in time to come. Many other similar instances might be produced from antient history, if it would not in this place seem tedious ; but before I quite take leave of this part of my subject, I beg I may instance two facts from modern history.

The *Portuguese*, who made up at least one half of that almost invincible *Spanish* infantry, that was so famous in the wars of *Spain* against the *United Provinces*, and which was at last totally cut off at *Rocroix*, these same gallant soldiers, whose hearts were thus steel'd with valour, had at that time, some of their nearest relations in the *East-Indies*, whose spirits were more yielding than the melting hearts of the tenderest women, insomuch that one *Dutchman* could put to flight twenty of those *Portuguese*.

Lastly, the *Castillians* to this day at home preserve their antient character of temperance, courage, and of persevering in hardships. *Corpora hominum ad inedia, laboremque animi ad mortem parati, dura omnibus & adstricta parcimonia. Illis fortior taciturnitatis cura quam vitæ.* Yet such of them as have been transplanted to some of the *Spanish* settlements of *America*, have had grand-children the most degenerate and cowardly that one could possibly imagine any one to be, who bears the character of a man. The ingenious author of *Reflexions Critiques sur la poesie & sur la peinture*, hath treated and illustrated this matter more at length, to whom I refer for more examples to this purpose.

As for any objections to what I have here advanced, which may be raised from the remarkable difference observable between the present and antient people of *Rome*, and the modern *Dutch* and the antient *Frisii*; there are so many moral, as well as physical reasons for it, that it would be more astonishing to find any resemblance in their characters. Antient *Rome* being sack'd upon the incursion of the *Goths* under *Alaric*, saw her magnificent buildings, her stately obelisks, her public baths, and her numerous aqueducts involv'd in one common ruin. These last convey'd water to purge and cleanse the public shores of the filth from so large a city. But when they were once broken and stopped, the air stagnating in them now and then, exhales and fills the region with
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such unwholsome fumes, that the healthiest stranger coming to settle there at particular seasons, is certainly seiz'd of a violent illness, which is very often fatal; besides the dire effects of monkish superstition, which hath overspread the land, deprives the country of hands to till the ground, and so leaves the *Campagna di Roma*, formerly the most pleasant and fertile part of all *Italy*, now a desolate and unwholsome country, where, instead of fields fertile in all the pomp of harvest, nought but unfriendly fogs and damps arise. As for *Holland*, it is certainly much chang'd from what it was in *Tacitus's* time, being formerly a woody country, and quite uneven, through which then a branch of the *Rhine* pass'd through *Utrecht* in a rapid course to the sea; now the whole country is one extended plain, cut out into such numerous canals, that the fanning breezes exhale all supplies from its head; and when a narrow canal hath reached within some hundred yards of the sea its force is spent, and it is only as a stagnating pool, never mixing its waters with the main. The people of *Holland*, instead of being a warlike race, have turned their heads solely to trade and pecuniary views, whereby they neglect all manly exercises, insomuch that *Puffendorf* says of them, *Equo insidens Batavus ludibrium omnibus debet.*

But what more nearly concerns our present inquiry is, that women in the south-east parts of *Italy*, in a chlorosis and hysterical affections, suffer

suffer the same delirious symptoms as persons poison'd by the *Tarantula* do, and are cured the same way (a). This consideration, together with the uncertainty of facts said to be effected by the bite of the *Tarantula*, hath given just grounds to question whether that disorder, which is annually found among some people of *Apulia*, the hottest part of all *Italy*, and is cured by musick, is not rather to be attributed to other causes than the bite of a spider. On the one hand *Baglivi*, after the example of some of the more credulous antients, gives us several accounts, which carry an air of candour and truth in particular parts of the narrative, and is since followed by a train of *Italian* Monks, whose relations are blended with such extravagant conceits and whimsical stories, as require more ample faith than our philosophical creed requires. Thus the credulous *Bocconi* relates, that no *minor Franciscan* friar was ever bit by a *Tarantula* at *Brundusium*, but many of the *Capuchins* have suffered. They further add, that when a *Capuchin* friar is bit, it proves to him an instant cure to put on the habit of a *Franciscan* (b).

This power they ascrib'd to a cell of St. *Francis*, in which none of the spider kind have ever bred. Now what sober philosopher could give credit to any fact asserted on the authority of so thorough-paced a believer? for my own part,

(a) *Mead* on the *Tarantula*, p. 109.

(b) See note annexed at the latter end.

Quodcunque ostendit mihi sic, incredulus odi.

On the other hand Dr. *Mead*, from a true spirit of philosophy, having stripped these authors of the most marvellous things, hath reconciled many people to the opinion, that this creature's bite is really venomous: but it is a hard matter to satisfy one's self and others in a point of this nature at so great a distance, and for that reason I shall insist no further on it at present; but rather observe, that, from what causes soever that disorder proceeds, some such I have undoubted reason to suppose annually prevails in the said province, and is cured by musick. A gentleman of great candour, who formerly lived three years at *Gallipoli*, assures me, he had frequently observed old women as well as young girls seiz'd with a melancholy disorder (*a*), which they call the bite of the Tarantula, that was cured no other ways than by musick; and that the persons who

(*a*) A disorder somewhat of the same kind is mentioned as an uncommon accident by *Aristoxenus* the musician, to have befallen the *Italian* women, and upon consulting the oracle, the same method of cure was declared at that time as is now a-days used. *ἐκτάσεις γὰρ γίνεσθαι τοιαύτας.* Tantæ enim apud eas extiterunt mentis abalienationes ut aliquando sedentes ac cænantes vocantem aliquem se exaudire opinatæ proriperint se, neque teneri potuerint atque extra urbem procurrerent. Locris porro & Rheginis oraculum hac de re consulentibus respondisse deum; finem mali futurum si die duodecima pæanes deo canerent vernos LX. Itaque inde in Italia multos extitisse pæanum scriptores. Appollon. hist. cap. 40.

formerly

formerly have been troubled with that disorder, tho' under the utmost streights to support themselves by their daily labours, never fail to lay by a little provision for the musick at the approaching season ; for when the time of the year returns, the patients fall ill again of the same moping complaints, if the same remedy is not used. 'Tis remarkable that different tunes affect different persons, but generally the briskest airs do most service to this melancholy people ; and such is the power of musick at the time, that they often fall a dancing upon hearing it, though before they could scarce speak, or be supposed capable of any degree of motion ; and in this extatick way they continue 'till their former health of body and mind is restored (*a*).

The phrensy is a disorder in which you find all the symptoms of a delirium, and a continued acute fever besides ; so that the method of cure by musick, which was above proved advantageous in the one, will be no less serviceable in the other disease. The truth of this assertion appears by a fact taken from the his-

See *Alexander ab Alexandro, Censorinus, Bagliivi, Bocconi, Mead*, and others (*a*).

Cholerici bilis incendio exuruntur, melancholici atræ bilis corroduuntur asperitate : molestus itaque humor semper angit utrosque, cogitque solamen aliquod maximum atque continuum contra continuam humorum molestiam quærere, hujusmodi sunt musicæ amorisque deliciæ, nullis enim aliis oblectamentis tam assidue operam impendere possumus quam musicæ vocumque delinimentis, pulchritudinisque illecebris. *Marfil. Ficin. Comment. in Platon. p. 787. Edit. Lugduni, fol. 1590.*

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tory of the Royal Academy at *Paris* (a). A dancing-master, after too much fatigue, fell ill of a fever, that in five days was accompany'd with comatous symptoms, which afterwards changed into a mute phrensy, in which he continually strove to get out of bed, and threatened with his head and stern countenance all who oppos'd him, and in a fullen mood obstinately refused all remedies. In these circumstances Mr. *de Mandajor* propos'd to try the power of musick; and by his advice an acquaintance play'd such airs in audience of the patient, as he knew formerly were most agreeable; this unusual method, in the case of a dying man, pass'd not uncensur'd; but as it had happy effects, the objectors were soon silenc'd; for when the patient heard the musick, he rais'd himself with an agreeable surprize, and attempted to keep time with his hands, which being prevented by force, he continued nodding his head in expression of pleasure; and when the by-standers discovered this in him, they left him to himself, and after a quarter of an hour he fell into a deep sleep, and had, during his nap, a happy crisis. Thus we find the turbulent and disorder'd senses lull'd in pleasing slumbers by the sweet extasies which sounds produce. And we find this practice in high repute among the best authors of antiquity, and strongly recommended in these cases: for *Areteus*, by sect a Pneumatic, who,

(a) *Academ. des Sciences, l'An. 1708. hist. pag. 27.*

from the dialect he wrote in, must have lived before *Julius Cæsar*, or not long after, according to Mr. *le Clerc*, expressly enjoins this remedy in such people, especially as were delighted with musick (a). The polished *Celsus* too, the *Roman Hippocrates*, who manifests himself a rational judge in physical subjects, and a man of excellent sense, concurs with the former opinion in order to compose the gloomy images that disturb the fancy in this disease (a).

From the instances already mentioned of the power of musick on diseases of the body, as well as in raising or composing particular affections of the mind, and from a consideration that madness is usually attended with violent excesses or defects of some of the natural passions, if not immediately caused by them; it is here submitted to the judgment of the philosophical physician, how far the power of musick, judiciously exerted, may be of service in maniacal cases. I own the presumption of it's success, in several of this kind, first induced me to treat professedly on the subject, when I called to mind the few, and too frequently fruitless attempts of physicians, to restore such miserable

(a) Ὑπνε δὲ ἀγωγή ἐκάστω καὶ τὰ ξυνήθεια. μέσικω δὲ ἔτι ἐθισμὸς αὐλῶν ἐφ' ἡσυχίῃ, ψαλμὸς λύρης ἢ πλεκτίδου, ἢ μελέτη Παίδων συν ᾧδῃ.

Περὶ Θεραπείας ΟΞΕΩΝ ΠΑΘΩΝ. l. i. p. 85. Edit. Wiggan.

(b) Quorundam enim vani metus levandi sunt quorundam discutiendæ tristes cogitationes: ad quod symphonix & cymbala strepitusque proficiunt.

Cels. l. 3. c. 18.

wretches,

wretches, as are once unhappily confined to a mad-house ; for in this affecting scene of human misery, modern practice allows of little more than of general evacuations first, afterwards nervous medicines and cold bathing. But the slender success of these remedies demonstrate their insufficiency, and therefore calls on the friends to society, to revive that antient practice, which was attended with such surprising and salutary effects.

And indeed the condition of maniacs in the worst state of their disorder, requires something more than is commonly practised, seeing the most drastic remedies, at that time, have little effect on the animal secretions ; for I have sometimes given to a maniac, to procure one stool, above six times the quantity of a purgative, that would have caused at least half a dozen motions to the strongest man in health ; and have also remarked the same thing, with regard to opiates, as well as other medicines. For the mind's attention being suspended, or unduly stretched, some organs of the body are susceptible of much stronger irritations, before the usual secretions and excretions take place ; for which reason maniacs can bear the most intense cold, and a long abstinence from all kind of refreshment, either of food or sleep, without a present remarkable prejudice. Now if it were found practicable in some cases to sooth the turbulent affections, and appease the disorderly roving of fancy, and as it were to re-
establish

establiſh the former union of the body and mind, by the powers of muſick, in that interval of time, proper medicines might be adminiſtered to better purpoſe, by which means the material offending cauſe may be evacuated, which could never be reached whiſt the mind's attention to the bodily organs ſo far ceaſed.

In the laſt century, the ingenious Dr. *Willis* ſeems to have pointed out this method of curing madneſs, but at the ſame time, convinces me how difficult a matter it is for a private man, even of great abilities, to eſtabliſh any opinion, when the ſentiments of his cotemporaries do not nearly concide with his own (*a*).

That muſick is effective in moſt people, and more particularly in ſome few (from a peculiar conformation, the force of cuſtom, &c.) of very remarkable alterations ſeems evident, from its being a kind of univerſal incentive to motion or reſt. And if we duly attend to the operation of medicines, we ſhall find their effects, and evacuations, to depend almoſt intirely on the motions, they appeaſe or excite. A majority of theſe we muſt acknowledge to operate

(*a*) *Muſica non modo phanataſiam delectatione quadam afficit verum inſuper cordis mœrori & triſtitia ſuccurrit; imo paſſiones quaſvis turbulentas ex ſanguinis æſtu & fluctuatione immodica in peſtore excitatas ſedat. (Deinceps). Melodia auribus introducta & per hanc provinciam diſfuſa quaſi benigno afflatu ſpiritus hujus incolas incantat, eoſque à furore avocatos velut ad tripudii numeros & modos componit, adeoque tumultus quoſvis & inordinationes inibi excitatas compeſcit. Willis. Cereb. Anat. c. 17.*

on the more previous emunctories, and groſſer humors of the body (a). But in muſick, providence ſeems to have favoured us with a much more agreeable application to the intelligent principle itſelf; and a moſt delicious cordial againſt the inquietudes and defects, which its imprifonment in the body has ſubjected it to. Beſides which, as it ſolaces the mind, and ſooths the paſſions, it has a conſiderable tendency to maintain that bliſful union, which gives the ſole reliſh of every enjoyment, the *Mens ſana in corpore ſano*.

And indeed to this purpoſe, not muſick only, but whatever is harmonious and agreeable to the other ſenſes, may probably conduce; ſuch as delightful and extenſive proſpects of nature, elegant buildings, fine paintings and refreshing odors, to ſay nothing of the inciting ſenſations of touch and taſte, the benefits of which are ſometimes outweighed by indulgence in them, beyond the limits of juſt proportion, which may be termed a kind of univerſal harmony.

We find many more diſeaſes mentioned in the remains of the antients, wherein they experienced the good effects of muſick, though the book which *Theophraſtus* wrote upon en-

(a) *But muſick ſweet can miniſter to minds diſeaſ'd,
Pluck from the memory a rooted ſorrow,
Raze out the written troubles of the brain,
And with its ſweet oblivious antidote
Cleanſe the full boſom of all perilous ſtuff
Which ways upon the heart.*

thusiasm is lost, yet *Athenæus* tells us, it related the method of curing ischiadic pains by the *Phrygian* harmony. And *Cælius Aurelianus* of the methodist sect in physic, which first appeared at *Rome* under *Augustus*, or *Tiberius Cæsar*, and was introduced by the fashionable court physician *Themison* (a), this *Cælius*, I say, relates, that *Philistion's* brother had reckoned musick serviceable in the *Sciatica*, and tells us of one man in particular who used to place the instrument, while he play'd upon the part affected, and by that means, the agony of pain was eased (b). Thus our author makes up for the barbarism of his language, by a greater treasure of practical knowledge, than is any where among the remains of antiquity to be met with, and most of which but for his superior diligence had been intirely lost in our times. This practice continued long in vogue, for *Alexander ab Alexandro* mentions it, and speaks more particularly of one *Ismenias* a *Theban*, who used musick in the cure of that, as well as in other pains of the hip (c).

But

(a) Et quidam methodici nostri seculi sub auctore (ut ipsi videri volunt) Themisone contendunt, nullius causæ notitiam quicquam ad curationes pertinere. Cels. p. 15. Ed. Vanderlind.

(b) Alii Cantilenas adhibendas probaverunt, ut etiam Philistionis frater idem memorat, L. 22. de Adjutoriis scribens quendam fistulatorem loca dolentia decantasse quæ cum saltum fumerent, palpitando, discusso dolore mitescerent, Cœl. Aurel. Edit. Aëman, p. 555.

(c) Fertur quoque Ismenias Thebanus plures Bœstiorum ischiadicos & coxendicum dolore laborantes in centione tibix bonæ valetu-

But as that method of cure will appear whimsical to most people at this time of day, so we find *Soranus* long ago declared *Philistion* and doctors of his way of thinking, were got beyond the bounds of common sense, and under a delusion for expecting to cure such painful diseases by such simple ways.

We are likewise told by *Gellius*, that *Theophrastus* recommended musick in the bites of venomous serpents, and the *Arabian* physicians, but more particularly their prophet himself, in a manuscript not yet translated from the *Arabick*, entituled *de Medicina prophetæ*, advised it when any one was poisoned by a scorpion. But it is to be presumed, as the bites of several venomous animals are, at particular times, quite innoxious, that those who under such circumstances supposed themselves cured by musick, would have recovered without any other remedy, than what is requisite to heal a common wound, in fact having received no infection.

But that we may in one view see most of what hath ever been propagated concerning this subject, let us read *Martianus Capella*. “ I have
 “ (says he) often cured disorders of the mind
 “ as well as the body with musick, sometimes
 “ franticks with symphony ; Damon, one of

valetudini restituisse. And farther he relates of *Theophrastus*, Eum literis mandasse accepimus quibusdam viperarum moribus cantus tiliarum & fidicinum atque alia organa artis musicæ modulate adhibita aptissime mederi. Dies Geneal, L. 2. C. 17.

“ my tribe, restrained some petulant and drun-
 “ ken young men with grave strains, our an-
 “ cestors cured fevers and stopped wounds with
 “ harmony. *Asclepiades* used *musick* for disorders
 “ of the ears ; who is ignorant (adds he) that
 “ ischiadic pains are discomfited by the melody of
 “ the organ. *Xenocrates* by this means cured
 “ Lymphatics, and the vision-struck ; besides it
 “ is well known that *Thales* of *Crete* removed
 “ a pestilence and other diseases by the sweet-
 “ ness of his lyre ; birds too are charmed with
 “ pipes, and elephants tamed by the sound of
 “ an organ (a).”

This is the sum of what he hath collected
 from other authors ; *Galen* tells the story of *Da-*
mon (b), and *Plutarch* furnishes him with se-
 veral of the rest.

But of all the antients, *Herophilus* seems to
 have been the greatest Enthusiast in this matter,
 in supposing the ordinary tenor of the pulse was
 regulated entirely in harmonic proportion, and
 for that reason condemns all other means of
 judging of the state of health, besides the obser-
 vation of the pulse. This fondness however,
 for a favourite conceit, was severely censured by
 some who came after him, as it evidently ap-
 peared an over refined speculation, that only

(a) De Nupt. Philol. D. 9. 179. Edit. Meibom.

(b) Δάμων ὁ μέσικος αὐληγίδι παραγόμενος αὐλίσση τὸ φρύ-
 γιον. &c. Simulac Damon musicus tibicinæ quæ adolescentibus
 quibusdam temulentis insanaque agentibus Phrygium canebat,
 mutare modum in dorium (βαρύτατον) gravissimum jussit, con-
 tinuo illi a temerario illo impetu destiterunt. Galen. de Placit.
 Hip. & Plat. L. 9.

existed in the imagination of its visionary author (*a*). And it is probably owing to the same turn of mind as his, that such strange accounts are recorded of the effects of musick on dolphins and other animals, the serious mention of which would, in our times, render a man justly suspected of more credulity, than sound judgment.

C H A P. V.

Of the retardation of old age by the application of musick.

BUT the business of a judicious physician should not be confined, merely to the cure of present diseases, or to prevent such, as may, probably, some time after, take place in the animal œconomy, but as a philosopher and friend to mankind, his views should be farther extended, and having once attained an adequate knowledge of the springs of life, and principles of being, and what obstructs their course, or hinders their free action, it behoves him to investigate some means of continuing them longer, or (if possible) of retarding the motion of some wheels in this complex machine, which continued in the usual manner, must of course wear out and destroy the whole frame in a

(*a*) Pliny, L. 29. § v. & L. 3. C. 10.

shorter time, than if the same quantity of motion upon the whole were carried on with a less degree of velocity. For the animal system may be compared to a piece of clockwork, which, from the composition and make of its internal parts, is capable of no more than a determinate quantity of absolute motion, before it will stop intirely by the laws of mechanism; but if the velocity of the motion is retarded, consequently the time will be longer; and if the weights be increased, it will take a shorter time to run down. Now it is the business of every wise physician, to investigate the main springs on which the animal clock-work depends, and then to apply this canon, to increase the motion of some smaller wheels, while he retards the main springs, which direct the greater part of the rest. With regard to this, we are to consider, that no vaunted elixir of the chymists, nor any costly juleps from the apothecary, yet known, have hitherto effected this desirable end; but whatever of this kind is to be done, can only be derived from such means as are yet untried by the greatest part of the world, and which indeed can never be cautiously attended to by any, who are not placed in a superior rank of the various classes of mankind; for nature ripens all her productions by slow degrees, and whenever we design to act wisely, we ought to proceed upon her plan, and therefore, after her example, studiously avoid all chasms, and only hope for
 success,

success, in proportion as we are capable, without injury to the vital functions, to divert the ordinary course of her operations by insensible degrees, and the gentlest efforts that can be attended with the effect proposed. But this can never be hoped from the vulgar herd of mankind, whom no motives of what sort soever can engage to be consistent with themselves, in any scheme of action, and much less, would they be satisfied to forego the pleasures arising from the irregular gratification of each passing fancy, for the future prospect of a prolonged existence in this world. Besides, the necessary precautions against death are (if I rightly conceive of them) too complex to be practised but by a few, in comparison of the bulk and multitude of men.

At present therefore, I shall only mention one principal cause of decay, and premature death to most people, who are in the busy world, and amidst the hurry of social life. This then I apprehend to arise from the great waste and dissipation of the animal spirits, seeing these are the primary agents and operators, which the prudent mind employs in producing innumerable alterations every moment on the body. If this then be the case, our primary intention should be to renew, in advanced life, a fresh supply of spirits, equal to those in former days, or if this be beyond our power, we should think of some method to regulate our constant expence, and with frugal œcono-

my lay up the superfluous waste, and unnecessary profusion so often committed, when corroding cares and inordinate passions, excite continual disquiet and anarchy within.

To illustrate this, it may be well worth observing, that of all persons mentioned in history to have attained very long life, philosophic and abstemious men have ever been remarkable. *Democritus, Plato, Parmenides, Gorgias, Protagoras, Seneca*, and others of antient time, among them oderns, mathematical philosophers in particular. And the great Lord *Bacon* asserts, that temperance and a Pythagoric life, or that kind which some of the religious abroad follow, is in general most conducive to longævity. Now *Plato*, as well as *Pythagoras*, were alike masters of musick and geometry, and when we recollect what was above delivered concerning the power of musick, I believe it will not be denied, that the use of it, and frequent attention to it, might in a good measure promote long life (a).

For the chief precaution against death, is to be derived from a conservation of a proper stock of animal spirits, which are chiefly exhausted by inordinate passions, an excess of natural evacuations, excruciating bodily pains, and such

(a) Præcipuæ curæ esse debet ut spiritus non exolvantur sæpius (et alibi) maxime autem de operatione spiritus inquisitum est, quia operatio super spiritus eorumque recrudescentiam ad prolongationem vitæ est via maxime proclivis. *Bacon Histor. Vit. & Mort.*

like causes. But we have sufficiently proved, that musick bids fair to divert the course of the spirits, and to maintain them in their just poize and movement, as it seems immediately to operate upon them ; Now our excellent author is of opinion, that an invigoration of the spirits, and making them as it were young again, is the readiest way to prolong life ; in consideration of which it may not be unworthy the trial of such as are desirous of long life, and can be at pains to pursue some rules easily to be deduced from *Bacon's* history of life and death, to recreate their spirits every day with a piece of good musick (*a*), and thereby a while unbend the mind's attention to such subjects, as are by experience found most fatiguing and exhausting ; for as our great dramatick poet somewhere observes,

Sweet recreation barr'd, what doth ensue
But moody, moping, and dull melancholy
Akin to grim and comfortless despair
And at her heels a huge infectious troop
Of pale distemperatures and foes to life.

Shakspear.

But here it may seem requisite to inquire, how far the most eminent masters of musick have above other men been remarkable for lon-

(*a*) Musica creditur multum conferre ad sanitatem si quis ea quomodo convenit utatur. Casp. Bartholin. de Tibiis Veter. L. 2. C. 2.

gævity. In this matter I confess myself at a loss as to facts; yet should it appear upon inquiry, that musicians are no more remarkable than other men on that account, I am persuaded it would not, with thinking men, intirely destroy the probability of success from this method. For it is too much the fate of musicians, as of other virtuosi, to forsake the severity and chastity of composition, and to form their own taste to that of the publick, instead of adapting the publick liking to nature, by which affectation of popularity, the florid manner of painting, and amorous soft strains of musick are become the most fashionable taste. Now a transition from our taste of art to real life is quite natural and easy, for the conduct of morals being founded on opinions, the artists soon come to relish the gaudy and luscious in life, as much as in art, and by this abuse, it frequently happens, instead of promoting the desirable ends the polite arts are capable of in society, the greatest inconveniencies spring from this quarter. Our musicians besides are mostly supported at theatres and other publick places, where some irregularities are ever unavoidable, which are more than capable of destroying the natural effects of the best musick on vulgar minds.

I cannot well dismiss this subject without mentioning a passage from that wonderful man *Roger Bacon*, whose extensive views of all nature I so much the more admire, as he lived alone the

man of science in an age of the grossest barbarism and monkish darkness. He among many other excellent tracts, hath written expressly of the cure of old age, and preservation of youth; and in this book often inculcates the necessity of the conservation of the animal spirits, as the primary means to produce long life; for says he, “ a chearful mind brings power and vigor, makes a man rejoice, stirs up nature, and helps her in her actions and motions, of which sort are joy, mirth, and whatever provokes laughter, as also instrumental musick and songs, to converse with company which discourse facetiously, to look on the heavens and stars.”

The last thing I shall mention, is taken from the *Arabian Abubethrus Rhazes*, one of the best medical authors in my esteem that ever wrote, he commends musick to chear the sinking spirits of pregnant women, and by this the babe unborn is much helped, and he declares that the mother, by attending to this and the other regimen which he judiciously prescribes, may be freed of the numerous train of ills, that usually attend the fair sex in this condition (a).

(a) Cantilenas vero & jocos atque ea quæ delectationem afferunt nec non somnum augere debet. Est enim possibile ut cum hoc regimine in prægnatione ægritudinem evadat. Rhaz. ad Mansorem, L. 4. C. 27.

C H A P. IV.

Wherein consists the difference of antient and modern musick.

IT only remains to consider how it comes to pass, that such surprising effects were commonly produced by antient musick, whereas modern artists rarely perform any thing very singular this way. For what are become of the charms of musick by which men, beasts, fishes, fowls and serpents, were so frequently enchanted, and their very natures changed : by which the passions of men were raised to the greatest height and violence, and then as suddenly appeased. It is agreed (says Sir *William Temple*) by the learned, that the science of musick possessed, and so justly admired by the antients is wholly lost, and that what we have now, is made up of certain notes that fell into the fancy or observation of a poor friar in chanting his mattins ; *Pancirollus*, *Isaac Vossius*, with others of a more illustrious character (a) concur in this opinion, and the learned *Vossius* insists upon it chiefly for the following reasons ; first he alledges, that too little regard is paid in modern compositions to the laws of the rythmus or variation of time, which is the very soul of harmony (b).

(a) See *Characteristicks*, Vol. 3.

(b) Τὸ πᾶν παρὰ μουσικῆς ὁ ἔνθρμος.

Secondly,

Secondly, our instruments are not well contrived; and lastly, our musicians insist too much upon reiterated quavers on the same notes, and introduce too many flurs into the composition. In answer to this we must intirely agree with these gentlemen, that the most excellent modern airs keep most to the laws of the rythmus in the bars, and every one is sensible of a superior pleasure arising from this cause, but the force of it will be best of all discovered in attending to the musick of *Milton's L' Allegro & Il Penseroso, Acis & Galatea*, set by the ingenious Mr. *Handel*, as these pieces are, of all his others, the truest to the rythmus, and therefore afford more delight in general, than any thing else of the kind. It must indeed be owned, that our instruments, however exactly made, have some unavoidable imperfections, which never will be otherwise. But yet I cannot think with *Vossius* (a), that the antient pipes and wind instruments, were so far preferable to all our inventions, as all such among us are liable to greater defects than the stringed instruments commonly in use. But the last objection hath most weight of all the rest. Seeing the frequent quavering so much admired by the moderns, perplexes the piece with such obscurity and intricacy, that the audience by this

(a) Unum tamen hoc adfirmare non vereor, vel solas antiquorum tibias universæ hujus sæculi instrumentariæ supellectili præferendas esse quam longissime. De Poemat. Cant. & Viribus Ryth. p. 98.

means lose the connexion, and that reference to the whole, which is so absolutely necessary to perfect our ideas of the symmetry of the parts. Whoever is acquainted with the noble remains of art left us by the antients, cannot fail to admire the simplicity of their works, and that just resemblance to nature, which is every where conspicuous in them ; nor is it in the least to be questioned, that the excellence of the antient *Grecian* musick consisted in this, though no remains of their compositions have reached us ; for it appears from what the sage *Plutarch* hath delivered of the comic poet *Pherocrates*, who introduces the genius of antient musick, lamenting the degenerate state of that in his time, by the great intricacy in the composition (a).

But the simplicity of their pieces appears by instruments which are extant on gems, &c. for these limited more the possible variety of sounds than our instruments, which admit of so many

(a) Λέξω μὲν οὐκ ᾔκουσα. σοὶ τὲ γὰρ κλύειν
 Ἐμοὶ τὲ λέξαι. θυμὸς ἡδονὴν ἔχει
 Ἐμοὶ γὰρ ἤρξε τῶν κακῶν Μελαννίπιδες
 Ἐν τοῖσι πρώτοις ὅς λαβῶν ἀνῆκε μὲ

——Μιλῆσιος τὶς Πύργιας

Κάκα μοῖ παρέσχεν. ὅτ' ἀπάντας οὐδ' ἔγω
 Παρελήλυθ' ἄγων ἐκτράπελους μυρμηκίας
 Κὰν ἐνυχὴ ποῦ μοι βαδιζούση μόνη
 Ἀπέλυσε κἀνέλυσε χορδαῖς δώδεκα.

And *Plutarch* adds Ἐπὶ μὲν τοῖ τῶν καθ' ἡμᾶς χρόνων, &c. At nostris temporibus tantos auctus differentiae forma accepit, usque adeo discessit a more majorum ut nulla sit amplius disciplinæ mentio nulla perceptio, omnes qui musicam attingunt accurrunt ad musam theatralem. De musica sub finem.

chords

chords, and consequently such numerous subdivisions of notes. But it is in musick as in painting, before a taste for either is formed by study and culture, our minds are transported with the first impulses of sense, and the novelty of the subject makes the most lasting impression on the mind ; especially if by means of a good natural capacity we can comprehend the design ; thus every one who has a natural ear for musick must own, that at first his delight and transport was greater at being present, when a simple sonnet was only sung, than in attending to the best consort of more complex musick. But when a natural taste for any thing is refined, or on the mending hand, we begin to compare the connection and mutual reference of the parts ; and as imperfections in some degree will ever be in all productions of human invention, these by study become more manifest ; and consequently where the unity of design is wanting, the subjects which pleased most formerly, fall so far short of the canon or model pre-established in the mind, that the pleasure abates in proportion : Hence it comes to pass, that a critical good judge of any performance in art, receives not an equal degree of satisfaction from indifferent pieces, as a man of as strong natural capacity and taste, before he has formed his liking according to the rules of science. But then it must be owned, the former's pleasure is far preferable to that of the latter, as the result of reason and reflection exceeds this,

which

which is little more than the effect of headlong sense and blind opinion. Here then is the probable solution to the question, why the antient musick had greater effects than modern compositions? The pleasures of every sense are stronger at first, though not so lasting, as these which are derived from calm reasoning. Now where simplicity appears, the mind is at little loss to find out the connection, and dependence of these parts on one another, and their mutual relation to the whole; but in complex systems it's an arduous task by induction to comprehend how each part is congruous and adapted to another, and by comparing, to determine how aptly these in common correspond, or are suited to the whole. So though we should allow a person of ordinary capacity receives not such transport from our musick, as that of the antients formerly afforded, yet (supposing all other circumstances the same) it will, I presume, be owned, a perfect judge of both would prefer that of the moderns, just as much as ours exceeds the antients in uniformity admist variety. But it must again be considered, that the profest admirers of antiquity contend warmly for the power of the rythmus, which (say they) is almost totally neglected by modern artists: So that little regard is observed in the bars of musick, whether the composition be made from swift dactyles, or grave spondees, iambicks, or anapests, or whatever different metre the versification consists of, by which in-

accuracy

accuracy we are deprived of that agreeable variety in the musick, that so much delights a judicious reader of *Dryden's* incomparable ode on *St. Cecilia's Day*, or of such pieces as several of the harmonious odes, by the polite and ingenious author of *The Pleasures of Imagination*. And indeed when we call to mind the dissonancy, occasioned by a short note in the bar of musick, which answers to a syllable that, in pronunciation, required twice or (may be) a quadruple time to make the verse read harmonious, and smooth, the discord, I say, the mind is conscious of, between the note and the foot of the verse, strikes us with a sense of deformity and want of grace, which is so much the more conspicuous to any person, as he becomes master of the harmony of words, as well as of sound; but our elegant and judicious composer is, to the great detriment of the publick taste, precluded from this advantage, by his being bred a foreigner, and therefore less familiar with our language.

But as the aforementioned treatise of *Isaac Vossius* hath already so amply explained all that can be said on this subject, I recommend it to the perusal of gentlemen curious in these matters. But some modern writers object to the perfection of the *Greek* musick, from the consideration of their scale, which by what *Euclid* and others have left us, must have been composed of tones *major* and *limmas*, whence it happens the ditonus or interval, equal to

two tones major, must necessarily be out of tune by a whole comma ; so it also happens their trihemitone falls short of the third minor by a comma, which is very disagreeable to a just ear. Now to rectify these imperfections, the moderns have substituted a scale composed of tones major and minor, with the semitone major; but this scale is only adapted to the concinnous constitution of one key, and whenever we vary from it, and change for another, we find some fourth or fifth erroneous by a comma. But this subject being of too abstracted a nature for this place, I refer the inquisitive reader to an ingenious letter from Dr. *Pepusch* to Mr. *de Moivre*, published in the *Philosophical Transactions* (a).

(a) Vid. Number 481.

F I N I S.



Note (b) to page 58 above.

Dalli esempj seguiti nella città di Brindisi, e nella provincia d'Otranto, non si è veduto giammai, che i P. P. Minori Osservanti di S. Francesco, siano stati morduti dalla Tarantola, e travagliati da questo impulso di ballare. de P. P. Cappucini ci sono esempj, e aggiungono, che venendo coperto il P. Cappucino Tarantolato, con l'habito di un P. Minore Osservante di S. Francesco, guarisca del male sudetto. Riferiscono questo vantaggio de P. P. Minori Osservanti ad una Cella, che fù fabricata in tempo di S. Francesco, ove non annidano mai Ragni, o Tarantole di Specie alcuna, quale Cella è nella Clausura de' P. P. Minori Osservanti, nel distretto della Città di Brindisi. Vid. Osservatione decima settima di Bocconi Musco di Fisica, p. 103.

Mr. Dyson must be with Mr.
Walker by 10 o'clock, today & call on Mr.
Elstob